

WHAT IS CLAIMED IS:

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1. A liquid ejection recording head for effecting recording by ejecting first liquid and second liquid which is a different kind of liquid through different ejection outlets, while bi-directionally scanning a recording material in a scanning direction, comprising:
 - a group of first ejection outlet arrays each of which has a plurality of ejection outlets at predetermined intervals arranged in a direction different from the scanning direction, wherein corresponding ejection outlets in the respective ejection arrays are aligned in the scanning direction;
 - a group, disposed adjacent said group of said first ejection outlet arrays, of second ejection outlet arrays arranged in a manner similar to said first ejection outlet array group;
 - wherein said first ejection outlet arrays include a first ejection outlet array for ejecting the first liquid and a second ejection outlet array for ejecting the second liquid;
 - wherein said second ejection outlet arrays include a third ejection outlet array for ejecting the first liquid and a fourth ejection outlet array for ejecting the second liquid;
 - wherein said first ejection outlet array group and said second ejection outlet array group are

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cont.) outlet array group and said second ejection outlet
array group are arranged such that kinds of the liquid
are symmetrical with respect to said first and third
ejection outlet arrays.

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6. An apparatus according to Claim 1, further
comprising a fifth ejection outlet array, in addition
to said first and second ejection outlet array, for
ejecting liquid which is a kind of liquid different
10 from the liquid ejected through said first and second
ejection outlets.

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7. An apparatus according to Claim 6, wherein
the liquid ejected from said fifth ejection outlet
15 array is black ink.

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A2) 8. An apparatus according to Claim 1, wherein
said first ejection outlet array group and said second
ejection outlet array are provided in one orifice
20 plate.

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9. An apparatus according to Claim 1, further
comprising a plurality of energy conversion element
array groups for ejecting the liquid through said
25 first ejection outlet array group and a plurality of
energy conversion element array groups for ejecting
the liquid from said second ejection outlet array

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disposed such that first ejection outlet array and third ejection outlet array are adjacent to each other and that ejection outlets of said first ejection outlet array and the ejection outlets of said third ejection outlet array are disposed with deviation in a direction of arrangement of the ejection outlets so as to be complementary to each other in the scanning direction.

2. An apparatus according to Claim 1, further comprising a common liquid chamber for supplying the first liquid to said first ejection outlet array and said third ejection outlet array.

3. An apparatus according to Claim 1, wherein said first ejection outlet array group and said second ejection outlet array group are provided with ejection outlet arrays for ejecting third liquid which is different from the first liquid and from the second liquid.

4. An apparatus according to Claim 3, wherein the first liquid is yellow ink, the second ink and third ink are cyan ink and magenta ink.

5. An apparatus according to Claim 1, wherein the ejection outlet arrays of said first ejection

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group.

10. An apparatus according to Claim 9, wherein
said substrate has a crystal face orientation of
5 <100>.

11. An apparatus according to Claim 9, wherein
said substrate has a crystal face orientation of
10 <110>.

12. A liquid ejection head according to Claim 10
or 11, wherein said substrate is provided with a
plurality of through-holes for supplying the liquid to
the ejection outlet arrays, and said through-holes are
15 formed by anisotropic etching.

13. An apparatus according to Claim 8, wherein
said orifice plate is made of photosensitive epoxy
resin material.

14. An apparatus according to Claim 9, wherein
said energy conversion element groups are groups of
electrothermal transducers for generating thermal
energy for ejecting the liquid through said ejection
25 outlets.

15. A liquid ejection apparatus comprising a

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carriage for carrying said liquid ejection recording head as defined in Claim 1.

16. A liquid ejection recording head for effecting recording by ejecting first liquid and second liquid which is a different kind of liquid through different ejection outlets, while bi-directionally scanning a recording material in a scanning direction, comprising:

an orifice plate provided with a plurality of ejection outlet arrays each having a plurality of ejection outlets arranged at a predetermined intervals in a direction different from the scanning direction;

an element substrate having energy conversion elements, disposed corresponding to the ejection outlets of said orifice plate, for ejecting liquid, liquid supply paths for supplying the liquid to said ejection outlet arrays of said orifice plate, and a driving circuit for driving said energy conversion elements; and

wherein said ejection outlet arrays include a first ejection outlet array for ejecting second liquid, a second ejection outlet array for ejecting first liquid, a third ejection outlet array for ejecting the first liquid and a fourth ejection outlet array for ejecting the second liquid arranged in the order named in the scanning direction, and

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wherein a supply passage for supplying the first liquid supplies to said second ejection outlet array and said third ejection outlet array.

5 17. An apparatus according to Claim 16, wherein said energy conversion elements are electrothermal transducer elements for generating thermal energy for ejecting liquid from said ejection outlet.

10 18. A liquid ejection apparatus comprising a carriage for carrying said liquid ejection recording head as defined in Claim 16.

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